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680

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Berlin, March 2007

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IMPRESSUM

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http://www.diw.de

ISSN print edition 1433-0210
ISSN electronic edition 1619-4535

Available for free downloading from the DIW Berlin website.

Dual Class Stock in Russia: What Explains the Price Differential between Common and Preferred Shares?

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Abstract

This paper aims to explain the large premium paid on common (voting) shares relative to preferred (non-voting) shares in the Russian stock market. Empirical analysis focuses on two main explanations relating the premium either to the voting right attached to common shares or to differences in liquidity between the two classes of stock. Two avenues through which the right to vote may give rise to the premium are distinguished. First, the presence of private benefits of control and the possibility of control contests may make the votes held by small investors pivotal, and therefore valuable. Second, non-voting shareholders may be expropriated as a class by voting shareholders. Regression analysis of RTS stock exchange data from 1997-2005 provides support for the control contest model of the premium as well as for the liquidity argument. The study finds no evidence that the premium is related to expropriation of preferred shareholders as a class.

JEL Classification: G32, G34

The author acknowledges financial and professional support from the Eurasia Foundation's Economics Education and Research Consortium (EERC), Eurasia Foundation grant No. 01-209.

Introduction

In the traditional theory of finance, the value of securities is associated with future cash flows discounted at the rate that reflects their risk. In other words, the value of securities is assumed to depend on the pecuniary benefits they are entitled to by law or by contract. Other properties of securities, for example, voting rights attached to company shares, are considered as having no effect on their prices.

Valuation of dual class stock in the Russian stock market seems to be at odds with this assumption. In Russia, companies are allowed to issue two classes of stock – called common and preferred shares – with the right to vote and entitlement to dividend being the two major differences between them. Common shares bear one vote each while preferred shares are non-voting (except for a few special cases that are stipulated in the corporate law). The latter, however, typically have superior dividend rights: the dividend on preferred share is bounded below by the dividend on common share. Despite the disadvantageous position of common shares with respect to dividends, they have been traded with a substantial premium, up to several hundred percent, over the price of preferred shares.[1] This is illustrated in Table 1 and Table 2 that provide data on share prices and dividends for three large companies belonging to three major sectors of the economy (the oil and gas industry, power utilities and telecommunications).

As in the Russian corporate law the only obvious disadvantage of preferred shares is the absence of the voting right, it is natural to ask if this can explain the premium attached to common shares. Indeed, in the light of the extensive international literature on valuation of dual class stock the very fact that preferred shares in Russia are valued less than common stock is hardly surprising. Numerous studies from other countries document a positive voting premium which ranges from between 5.4 percent and 82 percent, and is below 50 percent in most countries (Becht *et al.*, 2002). What makes the Russian case different is the unusually high magnitude of the price differential. Also, its volatility is remarkable: the premium was relatively low in 1996 and 1997, increased dramatically soon after the outburst of the financial crisis in

August 1998 and gradually declined since 2000. Figure 1 shows the dynamics of the premium for the selected three companies as well as the dynamics of the RTS Stock Exchange[2] index between 1996 and 2005. As long as the premium in Russia can be interpreted as reflecting the value of the voting right, the observed volatility casts doubts on the suppositions that the value of a vote is stable in time on the country level (see e.g., Nenova, 2003).

Another reason why the Russian case may be of interest is the fact that the dual class structure of corporate stock emerged exogenously due to specific regulations concerning privatization of former state-owned enterprises. Thus, the problem of endogeneity of the decision to issue different types of shares, which recent studies attempt to address (see e.g., Pajuste, 2005), is of less concern.[3] This makes the Russian stock market a potentially attractive testing ground for theoretical explanations of the differential valuation of dual class stock.

The existing literature on dual class stock in Russia is scarce. Willer (1997) interprets the premium on common shares as evidence of the prime importance of control rights and suggests that its decline in 1995-1996 testifies to that firms start to honour shareholder rights and regulatory progress is made. Characterizing Russia as a Wild West of corporate control, Goetzmann *et al.* (2003) investigate as to whether the size of the premium can be explained by the risk of expropriation of preferred shareholders as a class, i.e. by actions that ultimately divert cash flows from preferred shareholders to common ones. Using a simple perpetual growth model and assuming some plausible levels of the interest rate and company growth rate, the authors find it difficult to justify the current level of the premium by the risk of expropriation unless some improbable disaster scenarios involving an outright transfer of cash flow from preferred shareholders to common ones are considered. However, possible alternative and/or complementary explanations suggested in the literature – such as inferior liquidity of preferred shares – are not considered by Goetzmann *et al.* (2003). The authors assert that these additional explanations do not seem reasonable, but do not provide any supporting evidence for this claim.

The aim of this study is to test alternative explanations for the dual class stock price differential in Russia. It proceeds as follows. Section 2 briefly discusses how dual class stock is issued and treated in the Russian corporate law. Section 3 focuses on the explanations for

differential valuation of dual-class stock that are proposed in the literature: the control contest model of the voting premium, the expropriation of non-voting shareholders as a class, and liquidity differences between the two classes of stock. Section 4 presents empirical evidence from econometric analysis. Section 5 concludes the analysis.

The legal status of common and preferred shares in Russia[4]

Dual class shares were authorized in Russia in 1992 with the launch of the privatization programme. The programme established three basic methods of privatizing state-owned enterprises as well as stipulated a *standard corporate charter*, which large state-owned firms offered to privatization had to adopt. One of the methods implied re-establishment of state enterprises as companies with up to 25 percent of their charter capital represented by preferred (non-voting) shares, which were then distributed to company employees and retirees for free. While managers and employees – who had a strong say in determining the way of privatizing of their enterprises – usually preferred the other methods which allocated them controlling blocks of voting shares rather than non-voting stock, in large and capital intensive enterprises they were unable to accumulate enough funds to buy out 51 percent of shares, and therefore privatization involving dual class stock issue was implemented (see e.g., Hare and Muravyev, 2003). Thus, the privatization regulations made firm size and capital intensity the major factors triggering the issue of dual class stock in Russia.

The legal status of the two classes of shares was initially specified in the standard corporate charter, which, with few exceptions, was common to all recently privatized firms. While the rights attached to common shares were quite similar to those existing in most other economies (they are basically restricted to the right to vote at shareholder meetings and the right to receive dividends, which are indefinite), the status of preferred shares was peculiar. First, they could never make up more than 25 percent of the charter capital and had to have the same par value as common shares. Second, minimum annual dividends on preferred stock were set at the level of 10 percent of company's net profit (hereafter the 10 percent dividend rule). Third,

the dividend on preferred shares could not be lower and had to be paid before the dividend on common shares. Fourth, preferred shareholders were granted superior rights in the event of company liquidation. Fifth, preferred shares could be temporarily enfranchised. The standard charter endowed preferred shareholders with the right to vote on decisions that involved their "class rights" (changes in corporate charters concerning dividends, rights in liquidation, etc.) as well as with the right to vote on every decision in case the dividend on preferred shares was not paid or was not paid in full. Moreover, preferred shareholders were even granted a vetoing power on decisions that involved their rights – such decisions had to be approved by two thirds of the votes of preferred shareholders attending shareholder meeting. Finally, few corporate charters contained the provision that preferred shares could be converted into common ones, sometimes under certain conditions such as completion of privatization.

A more flexible regime for preferred shares was introduced with the enactment of the law on joint-stock companies in July 1996. Most importantly, the law did not make the vetoing power of preferred shareholders a mandatory rule. Now, in case of corporate charter amendments that involved interests of preferred shareholders, the law granted them just one vote per share and did not institute the norm that they could vote separately from common shareholders. Since votes of common and preferred shareholders were counted together rather than separately and preferred shareholders never held more than 25 percent of equity, as a group they could not veto any resolution of shareholder meetings, even those requiring supermajority approval. Required to quickly adjust their charters to meet the new regulations, many companies changed the articles referring to preferred shares using exact wordings from the new law; others were more selective and changed only those provisions that were in a direct conflict with the law.[5] The result was the emergence of companies with and without the vetoing power provision in their charters.

Not less important, the law did not institute the 10 percent dividend rule. Nor did it require that the dividend on preferred share could not be lower than the dividend on common one. Firms that issued preferred stock were required "to determine the dividend on preferred share", either as a fixed amount, a percentage of net profit or another precise way. This loose

provision, especially when combined with the loss of the vetoing power by preferred shareholders, explains the considerable variation in the dividend rights attached to preferred stock of different companies.

In 2001, several important changes were introduced in the corporate law in order to improve minority shareholders protection. A crucial change affecting preferred shareholders was that they regained the vetoing power on corporate charter amendments that involved their interests. Starting from January 2002 such changes have to be approved by 75 percent of the votes of preferred shareholders participating in the shareholder meeting, and these votes are to be counted separately from the votes of common shareholders.

To summarize, since their introduction in 1992, preferred shares have enjoyed a number of advantages of a pecuniary character over common shares. The apparent disadvantages have been the absence of the voting right and the possibility of "class rights" changes detrimental to preferred shareholders (especially until 2002 when the vetoing power of preferred shareholders was instituted in the law). In order words, preferred shareholders have presumably born an additional risk, namely the risk of expropriation by common shareholders.

Theoretical framework

The existing literature usually relates differential valuation of dual class stock either to differential voting rights or to the unequal liquidity of these shares. The liquidity argument simply states that a less liquid class of shares should be traded with a discount. The voting right explanation relies either on the control contest model that originates from the analysis by Grossman and Hart (1988) and its extensions in Zingales (1995) and Rydqvist (1996), among others, or on the assumption that non-voting shareholders can be expropriated by voting ones. The control contest model of the voting premium is by far the most common explanation in the literature.

The control contest model of the voting premium

The cornerstone of the control contest model is the so-called private benefits of control that can be appropriated by the party that controls the firm. Besides dividends and capital gains, which are shared with other shareholders, the controlling shareholders (or managers) can benefit from high wages, transfer pricing, and payments-in-kind or simply receive psychological benefits from being in control of the firm. These benefits are often extracted to the detriment of minority shareholders, implying expropriation of the latter. Minority shareholders, however, cannot do much about such expropriation due to the non-verifiable nature of the control benefits. If these private benefits could be evaluated they would immediately loose their "privacy" and minority shareholders could bring in a lawsuit against the corporation or the controlling owner.[6]

The market price of shares reflects their value to the marginal investor who has no means to enjoy private benefits of control. Why then is the voting stock priced at a premium? The theory suggests that investors attach some value to the voting right as long as there is competition among different management teams to acquire these votes. Voting shares have higher prices in the stock market since even a small fraction of them may be pivotal in a control contest, while non-voting shares are irrelevant in battles for control. Consequently, the voting premium reflects the price a potential bidder would be willing to pay to atomistic holders of voting stock in order to establish control over the company; and thus may be interpreted as a measure of the private benefits of control.

A formal model of the premium is provided by Zingales (1995). Assuming that 1) a company has two classes of shares which are identical in all respects except for the right to vote (one class has all votes), 2) there is competition for control over the firm among two parties (contested tender offer), 3) a bid involves all shares of the company, both voting and non-voting, though they may have different prices, Zingales shows that the voting premium is equal to the ratio between the value of the private benefits of control and the value of cash flow rights (the present value of corporate benefits distributed pro rata to shareholders) divided by the fraction of voting shares in the company's equity. Formally this can be expressed as follows:

$$VP^{CC} = (B/y)\ (1/\pi), \quad (1)$$

where VP^{CC} denotes the voting premium in the event of a control contest (the difference between the price of the voting share and the price of the non-voting one divided by the latter), B measures the size of the private benefits of control, y indicates the value of cash flow rights, and π represents the proportion of voting shares outstanding. The intuition behind π is that when the fraction of voting shares becomes larger, so does the number of shares among which the benefits of control are to be distributed.

This model applies only in the event of a control contest. Zingales (1995) then argues that the voting premium observed in daily trading should reflect the expectation of different prices of the two classes of stock in case of such an event. Therefore, it should be equal to the voting premium during a control contest times the probability (Φ) that such an event will take place:

$$VP = \Phi\ VP^{CC} = \Phi\ (B/y)\ (1/\pi). \quad (2)$$

Thus, according to the model, there are three major determinants of the size of the voting premium: the relative size of the private benefits of control (B/y), the probability of a control contest, and the fraction of the voting stock in the company's equity. The probability Φ of a contested tender offer directly depends on the ownership structure of companies: it is zero if a company has a majority shareholder, positive but small if there is one large owner and all other shareholders are small, and large when there are multiple large shareholders with similar stakes while the remaining shares are distributed among small owners.

Though the assumptions of the control contest model do not seem very realistic in the institutional environments that prevail in the world (e.g., concentrated rather than dispersed ownership and absence of an active market for corporate control in many countries; see Denis and McConnel, 2002; Becht, 2002; La Porta *et al.*, 1999), it has been supported in many empirical studies and remains the dominant explanation of the voting premium. For example, Zingales (1994) reports that the voting premium in Italy is directly related to the value of

control and varies according to the ownership structure and the concentration of the voting rights. Rydqvist (1996) focuses on the link between the voting premium and the ownership structure in Swedish companies and reports that the voting premium is larger in companies where the two biggest blockholders are of equal size – which increases the probability of a control contest – than in firms where the first blockholder is much larger than the second one. The control contest model also underlies the analysis of the voting premium by Nicodano (1998), who focuses on the effect of pyramiding – an additional deviation from the one-share-one-vote rule – in Italy; by Hoffmann-Burchardi (1999), who studies the role of institutional and regulatory environment in Germany and finds lower voting premium in companies that accepted the mandatory bid rule; by Nenova (2003) whose innovative study focuses on the institutional determinants of the value of controlling blocks using a cross-country sample of firms.

Expropriation of preferred shareholders as a class

As mentioned in the previous section, the extraction of private benefits of control often, though not always, involves expropriation of minority shareholders. The control contest model sketched above assumes that the extraction of private benefits is detrimental for voting shareholders to the same extent as to non-voting ones – but the former are able to recover at least a part of the loss if control over the company can be contested.

However, it is also possible that expropriation only concerns preferred shareholders. This implies diverting cash flows from non-voting shareholders to voting ones either through explicit changes in the corporate charter that reduce cash flow rights of the former group or through more sophisticated techniques such as share swaps in mergers (see e.g., Goetzmann *et al.* 2003). This scenario is not implausible: voting shareholders may have both incentives and power to make such decisions. Given the complete separation between cash flow rights and control rights in case of non-voting shares, particularly strong protection may be needed for non-voting shareholders. As in the general case with minority shareholders, this may come from both legal and extra-legal mechanisms.

Usually this problem is explicitly addressed in the corporate law, for example, by strictly linking the dividend and other features of non-voting shares to the analogous features of voting shares. In more flexible regulatory environments that permit varying the rights attached to non-voting stock, the law typically requires a majority consent of the holders of those shares when a change in their "class rights" is on the agenda (i.e., the shareholders are granted a conditional right to vote). Yet it is plausible that these mechanisms do not always ensure equal protection of non-voting and voting shareholders. Explicit legal norms may simply fail to cover all eventualities. The conditional right to vote may also be ineffective due to the free rider problem facing non-voting shareholders, as they are usually quite dispersed. Indeed, non-negligible blocks of voting shares are often held in order to exert some influence over the company. In contrast, there is little reason for holding non-voting shares concentrated since the conditional right to vote is rarely activated and is always limited in scope.

Differences in liquidity

Since contributions by Stoll and Whaley (1983) and Amihud and Mendelson (1986), the role of liquidity for valuation of securities is widely acknowledged: higher liquidity *ceteris paribus* contributes to higher prices of securities. The logic is simple: the less liquid security should have higher trading costs which should be reflected in a lower price of that instrument. Moreover, the effect of trading costs is not of second-order and may be considerable since these costs have to be incurred every time the asset is traded.

Liquidity is an elusive concept: there is no single measure that captures all essential aspects of liquidity (Amihud and Mendelson, 1991).[7] It is even more complicated to judge relative liquidity of dual class shares. For example, these classes typically constitute unequal proportions of company equity and are issued in different numbers. All other things being equal, the larger the fraction of a particular class in company equity, the higher its liquidity compared with the other class. However, for corporate control reasons voting shares may be held more concentrated than non-voting stock. Hence, a large share of voting stock may be out of trade in

the market. As a result, when the fraction of non-voting stock is relatively small, the number and the volume of transactions may be larger for common stock while the ratio of the number of shares traded in the stock exchange to the total number of shares may be larger for preferred stock.

Empirical evidence of the effect of liquidity on dual-class stock prices is mixed. For example, Smith and Amoako-Adu (1995) find no compelling evidence that liquidity (measured by turnover) matters for the voting premium in Canada. No effect of liquidity measured by the average trading volume in the superior class divided by the average trading volume in the inferior voting class is reported by Zingales (1995) for the US and Chung and Kim (1999) for Korea. However, Nenova (2003) reports a significant effect of liquidity (proxied by log-difference in turnover and bid-ask spread) on the value of corporate votes from cross-country data analysis and warns against biases that may arise if liquidity is not properly controlled for.

Empirical analysis

Data and sample description

The sample for this study was constructed to include Russian companies whose common and preferred shares were traded in the RTS between 1997 and 2005.[8] To be included in the sample, each company had to satisfy the following criteria:

1) it issued two classes of stock;
2) its common and preferred stock were listed in the RTS stock exchange;
3) the dividend on preferred share was bounded below by the dividend on common share;
4) both types of stock were simultaneously traded in at least one of the reference periods, which are defined as February 10 – March 15 each year.

While the first two restrictions are obvious, the latter two may require explanation. The third restriction is essential as it excludes preferred shares that are very dissimilar to common ones with respect to dividend flows, in particular, preferred shares with fixed rather than

variable dividend. The fourth restriction implies the use of annual rather than semi-annual or quarterly data, which is largely motivated by the low variation in the explanatory variables over short periods of time (in particular, slow changes in the ownership structure and differential characteristics of dual class stock). The reference period between mid-February and mid-March was chosen for the ease of controlling for dividend differences. This period directly precedes the ex-dividend dates in most companies (these are normally in April or May), so the expected annual dividends from the previous financial year are likely to be almost fully reflected in the current prices of shares. Thus, assuming that the market anticipates future dividends correctly, share prices may be adjusted for the actual dividends that will be paid ex post. The considerable length of the reference period, i.e. seven weeks, is motivated by the necessity to increase the number of observations: the longer the time frame, the larger the number of companies whose common and preferred shares are traded at least once within the period. An obvious shortcoming of expanding the time frame is that the difference in average-over-the-period prices of the two classes of stock may be less informative, especially when one class of shares is traded at the beginning of a period characterized by large changes of share prices while the other class – at the end of the period.

Constructed along these lines, the sample embraces 99 companies in nine time periods with 341 observations in total, of which 313 observations (corresponding to 71 companies) form an unbalanced panel. The number of observations per year is small (the maximum is 52 in 1998, the minimum is 13 in 1999) which prevents sensible econometric analyses based on separate cross-sections and restricts the flexibility of modelling in the panel setup (e.g., by allowing for time-varying coefficients). On the other hand, the panel nature of the data permits accounting for unobserved characteristics of firms as long as relevant unobservables can be regarded constant within the period spanned by the panel.

Almost all data used in this study are publicly available in the Internet. As regards share prices and other information about trading in the RTS, they are accessible from the RTS web-site (http://www.rts.ru). Company data can be found in the quarterly reports to the Federal Commission on the Securities Market (FCSM) and are downloadable from its web-site

(http://disclosure.fcsm.ru). Since quarterly reports are available starting from 1998 at best, other sources such as company annual reports and information from the Skate financial press agency were used to fill in the missing data (primarily on ownership).

Modelling issues and econometric specification

Based on the theoretical considerations discussed above, the general functional relationship can be expressed in the following way:

$$VP = \mathrm{F}\,(\pi, \Phi, B/y, Expr, \Delta Liq), \tag{3}$$

where *VP* is a premium on common shares, π, Φ, B/y are the variables in the control contest model of the voting premium (2), *Expr* is a measure of the expropriation risk facing preferred shareholders, and ΔLiq is a measure of relative liquidity of preferred shares. This model contains several variables that cannot be measured directly and for which there are no conventional proxies. Thus, the exact specification depends on the ability to resolve a number of measurement issues.

Probability of a control contest There is no straightforward way to obtain the value of the Φ factor. Rydqvist (1987) was the first to use a modified version of the Shapley value (Milnor and Shapley, 1978) as a proxy, followed by Zingales (1994), Robinson *et al.* (1995), and Chung and Kim (1999), among others. If approximated by the Shapley value, Φ equals zero when one individual owns more than 50 percent of the votes; is small when one investor owns a substantial but still minority fraction of votes and no others wield any significant block; and increases dramatically when two shareholders own large fractions of votes and the pivotal votes are distributed among small shareholders. The Φ factor, when approximated by the Shapley value, proves to be a statistically significant explanatory variable in all mentioned studies. However, the theoretical foundations of the Shapley value are not unquestionable (Zingales, 1995) and other proxies for the probability of a contested takeover may be warranted. Alternative measures include, for example, a dummy equal to unity if one shareholder owns a majority of stock and zero otherwise and a dummy equal to unity if there are at least two large

shareholders but neither has a majority of votes (Zingales, 1994); a vector of variables comprising ownership (the fraction of votes held by insiders), size (measured as the logarithm of the market value of equity) and abnormal stock return (Smith and Amoako-Adu, 1995); ownership variables in Rydqvist (1996).

The use of the Shapley value is problematic in the Russian context. One reason is that the majority of traded firms (88 percent in the sample) have controlling shareholders, which implies that the variable takes too many zero values and has little explanatory power. Perhaps more important, the Shapley value cannot be measured precisely since only the upper tail of the distribution of ownership in each company is known (the disclosure cut-off in Russia is 5 percent). In addition, Leech (1988) shows that approximations of the Shapley value contain a significant error when the ownership stake of the largest shareholder exceeds 30 percent. But this is a typical case in Russia. Therefore, our analysis relies on other proxies of the probability of control contests.

Another and related issue is whether the identity of the controlling shareholder should be taken into account. Given the large number of companies controlled by the state in the 1990s (either directly or through state holding companies) and efforts of the government to privatize state assets, it seems plausible that majority state ownership does not necessarily rule out the voting premium: the market may anticipate future privatizations which will eventually open up a space for a contest for control.

Taking these considerations into account, in what follows the Φ factor is approximated by

(a) a dummy for no majority control (*No_cont*),

(b) a dummy for no majority control by the state (including other state-owned companies, *No_stcont*) plus a dummy for no majority control by private shareholders (*No_prcont*),

(c) a dummy equal to unity if the largest shareholder in a company has less than 50 percent of votes and the second largest one has more than 10 percent (variable *Two*),

(d) the ownership stake of the largest shareholder (*Owner1*),

(e) the ownership stake of the largest and second largest shareholders (*Owner1* and *Owner2*),

(f) the difference between the stakes of the two largest owners (*Owner1-2*).

The intuition behind the last approximation is that the smaller the difference, the more valuable the votes of small shareholders, in particular if the company is not majority controlled.

Private benefits Although private benefits of control cannot be measured directly, the assembled dataset provides a potential proxy for their relative size: a dummy which equals unity if a company has introduced its shares to the US stock market by issuing American Depository Receipts (ADR). The rationale is that a company that wants to issue ADR has to adhere to fairly strict disclosure rules in the US which may restrict the opportunities to extract private benefits of control. A more extensive discussion of the role of ADR in reducing private benefits of control is provided in Doidge (2003). Note that according to the control contest model, a reduction in the private benefits of control should affect the voting premium only in case of non-zero probability of a control fight; thus the ADR dummy needs to be interacted with the no control dummy.

Expropriation risks facing non-voting shareholders There is no perfect measure of the risk of expropriation of preferred shareholders as a class. Yet the vetoing power of preferred shareholders may serve as a proxy: when changes in the corporate charter that concern preferred shareholders require (super)majority approval by them, the risk of expropriation presumably becomes lower. A dummy variable for the vetoing power is constructed; it equals unity for all companies starting from 2002 when the vetoing power of preferred shareholders was instituted into the corporate law.

Liquidity Since measuring liquidity of the two classes of stock on the basis of the volume of trade or the number of transactions may be ambiguous, this study uses the spread-based approach to assess liquidity:

$$Liq = (price_a - price_b)/price_a, \quad (4)$$

where $price_a$ and $price_b$ denote the ask and bid prices (closure) on the 1st of March each year or on the nearest trading date in case the stock exchange was closed on the 1st of March. Defined this way, the variable takes any value in the (0; 1) interval and measures *illiquidity*: the larger the value, the lower liquidity of the respective class of shares. The relative liquidity measure is defined as the difference between the estimated liquidities of the two classes, Liq_c and Liq_p:

$$\Delta Liq = Liq_c - Liq_p. \quad (5)$$

Dividend differences Controlling for dividend differences between the two classes of stock represents a challenge in the empirical analysis: dividends on common and preferred shares typically differ; moreover, they are not functionally dependent on each other. This study uses a current period difference in dividends divided by the price of preferred share as a control variable in the regression:

$$\Delta Div = (div_p - div_c)/price_p. \quad (6)$$

Note that this correction is imperfect: while accounting for dividend differences in the current period, the variable cannot account for future differences that may be expected by market participants and may therefore be reflected in share prices.

Another variable relevant for controlling for differences in dividend entitlements is a dummy variable for adherence to the 10 percent dividend rule.

Our basic specification (with probability of control contest proxied by no control dummy) is the following:

$$VP_{it} = \beta_1 No\_contr_{it} + \beta_2 ADR\_No\_contr_{it} + \beta_3 \Delta Liq_{it} + \beta_4 Veto_{it} +$$
$$+ \beta_5 Conv_{it} + \beta_6 Vote_{it} + \beta_7 \Delta Div_{it} + \beta_8 Div10_{it} + \delta_t + u_i + \varepsilon_{it}, \quad (7)$$

where the dependent variable *VP* is a premium on common shares, *No_contr* is a dummy for no control, *ADR_No_contr* stands for *ADR* dummy interacted with *No_contr* dummy, ΔLiq is a measure of relative liquidity of the two classes of stock, *Veto* is a dummy for the vetoing power of preferred shareholders, *Conv* is a dummy for convertibility of preferred shares, *Vote* is a dummy for temporary enfranchisement of preferred stock, ΔDiv is a variable capturing dividend

differences, *Div10* is a dummy for the 10 percent dividend rule, δ is a time effect, u is firm-specific effect and ε is a random disturbance. Descriptive statistics of all variables are reported in Table 3 and Table 4.

Note that (7) omits the variable reflecting the fraction of voting stock in company equity because this variable has a very low variation across firms and over time with most of the sampled firms having their equity split between common and preferred stock in the proportion of 75 to 25 percent (due to the specifics of the privatization regulations of the 1990s).

The above formulation (7) is an individual effects model with different time intercepts. Inclusion of the latter is a standard practice in econometric analysis involving short panels and is applied to capture aggregate time effects that have the same influence on all units (Wooldridge, 2002; Cameron and Trivedi, 2005). Firm effects u are allowed for in (7) even though the theories explaining the premium provide no clear rationale for them; in fact, it may be argued that our analysis focuses on the difference in prices of *similar instruments* (shares of the two classes) of *same firms* and since many characteristics of firms, whether observed or not, affect these prices in similar ways, many idiosyncrasies are differenced away. In what follows, the issue as to whether firm effects should be modelled or not is resolved via specification tests.

Models of type (7) can be estimated using the fixed effects (FE), random effects (RE) or pooled OLS estimators. The differences between these three can be summarized as follows. Pooled OLS is appropriate in case of no unobserved heterogeneity among firms, it also remains consistent if the true model is RE (the crucial condition for which is uncorrelatedness of unobserved effects with any of the explanatory variables). The fixed effects estimator allows for arbitrary correlation between the unobserved effects and the regressors and is consistent regardless of whether the true model is FE, RE or pooled OLS. Importantly, both pooled OLS and RE are inconsistent in case the true model is FE (see, e.g., Cameron and Trivedi, 2005). In what follows, the choice between these models is made on the basis of statistical tests (Hausman test and Breusch and Pagan Lagrangian multiplier test for random effects).

Estimation results

The main empirical results are shown in Table 5, Table 6 and Table 7; Table 8 shows results for two sub-samples covering two periods: 1997-2001 and 2002-2005. Each specification reported in Table 5, Table 6 and Table 7 (they differ by proxies for the probability of control contest) is estimated using the FE, RE and pooled OLS estimators. The pooled OLS estimates are based on the full sample embracing 341 observations; the other estimators are applied to the unbalanced panel consisting of 313 observations.[9] For each specification, the F-test for fixed effects, Hausman test and Breusch and Pagan Lagrangian multiplier test for random effects are reported. In all regressions, standard errors are corrected for heteroscedasticity and serial correlation within clusters (firms).

The results from applying the three estimators to model 1, which proxies the probability of control contest by the dummy for no control, are reported in Table 5. Among these estimators, the diagnostics tests favour pooled OLS. In particular, the Hausman test does not reject the null that the RE estimates are not statistically different from the FE estimates; this is normally interpreted as evidence that there are no unobserved effects correlated with explanatory variables, so the RE estimator is consistent. Next, the Breusch and Pagan LM test for random effects does not reject the null that variation of unobserved effects is zero.

According to the OLS results, the coefficient on the dummy for no control is positive, which is consistent with the control contest model, but significant at the 10 percent level only. The coefficient on the ADR dummy interacted with the dummy for no control also has the expected negative sign indicating that ADR issue reduces the price differential.[10] The coefficients on the liquidity difference measure, convertibility dummy and the 10 percent dividend rule dummy are all significant and have expected signs.[11] The coefficient on the differential dividend variable has the expected negative sign but is only significant at the 10 percent level in the OLS estimation. The proxies for expropriation risk and temporary enfranchisement are insignificant. Note that a bulk of variation in the dependent variable is explained by time dummies.

Model 2 is intended to check as to whether the premium depends on the identity of the controlling owner and for this purpose it differentiates between control by private entities and that of the state. The underlying hypothesis is that the premium on common shares is larger in companies that are controlled by the state – future privatizations may dramatically alter control structures in these firms. The specification tests again give preference to the pooled OLS estimator.[12] The coefficients on the dummy variables for no control by the state and for no control by private entities are positive with the former being significant at the 10 percent level, but not statistically different from each other. Hence, there is no support for the hypothesis that majority control by the state means higher probability of a control contest. All other coefficients do not change much when compared with model 1.

Model 3 uses a dummy variable for the presence of two large shareholders neither of which has 50 percent of votes. In this specification, the Hausman test is somewhat inconclusive: the coefficients from the FE and RE estimators are different at the 10 percent level, although not at the 5 percent level. The coefficients on the proxies for the probability of control contest and for the relative value of private benefits are statistically insignificant in the FE estimation, but significant in the both pooled OLS and RE estimation. A general problem with the FE estimator in this study is that the within variation of many explanatory variables is quite small, so the coefficients are estimated on the basis of a handful of observations at best.

Models 4, 5 and 6 proxy the probability of control contest by continuous variables – the stake of the largest shareholder, the stakes of the two largest shareholders and the difference between these stakes. With continuous proxies, the diagnostics tests favour the RE model: the Hausman test is passed while the Breusch and Pagan test for random effects does not reject heterogeneity of unobserved effects at the 5 percent level. In these specifications, the coefficients on the control contest proxies are significant at the 5 percent level (10 percent in the FE model), while the coefficients on other regressors change little compared with model 1.

In particular, Model 4 shows that the premium is negatively related to the ownership stake of the largest shareholder (variable *Owner1)* – a one percentage point increase in the ownership stake of the largest shareholder reduces the premium by 0.9 percentage points. It has

been tested at to whether this relationship depends on whether a company is majority-controlled or not: the ownership stake of the largest shareholder is interacted with the control dummy and the resulting variable is included in the model (this specification is not reported). There is little evidence of a non-linear relationship: the coefficient on the product of the two variables has the expected negative sign (consistent with the hypothesis that concentration of ownership in the hands of the largest owner matters more if the company is not majority controlled) but is not statistically significant.

Model 5 provides a test of whether the ownership stake of the second largest shareholder (*Owner2* variable), in addition to the ownership of the largest one, matters for the magnitude of the premium. The control contest model predicts that the higher the fraction of shares held by the second largest owner, the higher the chance of a control contest, especially if a firm is not majority owned. Alternatively, the second largest shareholder may restrict opportunities of the largest owner to extract private benefits. It turns out in Model 5 that the coefficient on the variable of interest is statistically insignificant. Adding the interaction of the stake of the second largest shareholder with the dummy for no control (the second largest stake may have more importance in case of no majority control) changes things little, with the new variable being statistically insignificant (this specification is not reported).

Model 6 proxies the probability of a control contest by the difference between the ownership stakes of the largest shareholder and the second largest one (variable *Owners1-2*). The underlying assumption is that the closer the fractions of shares held by the two largest shareholders, the higher the probability of a fight for control. Hence, the premium should increase when the difference becomes smaller resulting in a balance of power between the two largest shareholders. This hypothesis is not rejected by the data: the coefficient on the variable of interest is negative and statistically significant (at 5 percent level) – increasing the discrepancy between the ownership stakes of the two largest shareholders by one percentage point reduces the premium by about 0.65 percentage points. Similar to the previous findings, with different proxies for the probability of control contest, this result holds for all companies regardless of the presence of controlling owners. This hints on the importance of significant

minority ownership stakes. Overall, the results concerning the second largest shareholders can be rationalized if large minority investors have bargaining power and enjoy private benefits regardless of whether the company is majority controlled or not (this interpretation is suggested by Nicodano, 1998). For example, if a minority shareholder has a representative in the corporate board (this is not unlikely given that the boards in Russia are elected by cumulative voting), he may affect corporate decisions that require unanimous approval by the board.

Similar to Models 1-3, in Models 4-6 we find evidence of a significant effect of the issue of ADR on the premium. Differences in liquidity, convertibility of preferred stock and differences in dividends (measured by the 10 percent dividend dummy) are statistically significant factors in these models. There is no support for the hypothesis that the price differential is driven by the risk of expropriation of preferred shareholders as a class: the coefficient on the respective proxy variable has the expected sign, but is statistically insignificant.

In order to address the question of whether the estimated relationships change over time, we run regressions for two sub-samples of the original sample, covering data from 1997-2001 and 2002-2005 respectively. The first period covers the initial stage of the development of the Russian stock market, marked by August 1998 financial crisis and long stagnation thereafter, while 2002-2005 is a period characterized by improved shareholder protection and robust growth of the market. Importantly, the sample is divided into two nearly equal parts with 178 and 163 observations, respectively.

Table 8 shows estimation results (obtained from OLS) for the models that contain the dummy for no control, dummy for two large shareholders and the variable measuring the difference in the ownership stakes of the two largest shareholders as proxies for the probability of control contest. In the second sub-sample, the coefficients on *Veto* and *Conv* variables cannot be identified: the dummy for convertibility equals unity for one observation only (thus, the variable is dropped and the observation is excluded) and there is no variation in *Veto* variable as the vetoing power of preferred shareholders applied to all companies (it was instituted in the law in 2002).

In both sub-samples, there is evidence in favour of the control contest model, although it is rather weak. Collinearity of regressors is visible in the second sub-sample (variables *No_contr* and *ADR_No_contr*). The two important differences between the estimates from 1997-2001 and 2002-2005 are the effect of liquidity (which is only significant in the earlier period) and the effect of differential dividends (which is more pronounced in the later period). As regards the effect of liquidity, it presumably has to do with the illiquidity of preferred shares stemming from the initial allocation of them in negligible fractions among company employees, which made these shares virtually non-tradable for a long time. The purchase of these shares from employees – which was necessary to build up standard tradable lots – took considerable time. In contrast, large fractions of common stock were sold during the process of privatization to institutional investors at voucher and money auctions, which encouraged trading activity in the market. As regards the effect of differential dividends in the two periods, the result is consistent with the observation from the early period of the development of the Russian stock market that share prices hardly adjusted for the value of dividends when the ex-dividend date passed (Securities Market, 2001).

Conclusion

This study has found evidence of the validity of the control contest model of the voting premium for explaining the price differential between common and preferred shares in Russia. The model is supported in most specifications regardless of the choice of proxies for the probability of control contests. The evidence from the specifications that use continuous measures of ownership is somewhat stronger than from the specifications relying on more conventional proxies by majority control dummies. In particular, we find that the larger the difference between the ownership stakes of the largest and second largest shareholders, the smaller the premium.

Additional support for the control contest model comes from the effect of ADR issue on the premium. Our results are consistent with the hypothesis that the issue of ADR reduces

private benefits of control in companies that are not majority owned. The effect is non-negligible from the economic viewpoint: the issue of ADR reduces the premium on common shares by about 35 percentage points on average.

Our empirical analysis does not provide any evidence in favour of the expropriation hypothesis. However, this result is hardly sufficient to claim that the expropriation of preferred shareholders is irrelevant; it may well be the case that a dummy for the vetoing power of preferred shareholders is a bad proxy for such expropriation.

The difference in liquidity of the two classes of stock turns out to be an important determinant of the premium in 1997-2001, the early period of the development of the Russian stock market, but not in 2002-2005.

As regards other differential characteristics of the dual class shares, there is evidence that the magnitude of the premium was influenced by the differences in dividends; this effect was more pronounced in 2002-2005, relative to 1997-2001. The convertibility option mattered a great deal, but this result is expected and trivial from the economic viewpoint. There is no evidence to suggest that enfranchisement of preferred shares had any effect on the premium.

Overall, the main contribution of this study is that it confirmed the validity of the control contest model of the voting premium in the emerging market of Russia, which is interesting as the dual class structure of company equity in the country was imposed exogenously by privatization regulations. By showing that the premium is systematically related to the factors suggested by the theory, the study left fewer reasons to label it as being puzzling.

Notes

[1] Hereafter the premium is defined as the difference between the price of common shares and the price of preferred ones divided by the price of preferred shares.
[2] RTS stands for the Russian Trading System, the first electronic trading system in Russia established in September 1995, and transformed into RTS Stock Exchange in 1997.
[3] Non-voting shares are usually issued in order to raise funds without jeopardizing control over the firm; thus, the decision to issue such stock is likely to be related to the size of the benefits of control.
[4] This is a compressed version of the description provided in Muravyev (2004).
[5] By 1998 about one-half of the companies that had issued preferred shares eliminated the rule on the vetoing power of preferred shareholders from their charters (Securities Market, 1998). The reasons for retaining or removing this rule are not clear: for example, most regional telecommunication companies did abolish the rule (a famous exception is MGTS – Moscow City Telephone Company) while most regional power utilities preserved it. Interestingly, the regional companies in both sectors are majority controlled by state holdings – Svyazinvest and Unified Energy Systems respectively.
[6] The theory suggests that incentives for expropriation increase with the gap between the control rights and the cash-flow rights as first shown by Jensen and Meckling (1976). Hence, a link between expropriation and firm-specific characteristics such as the distribution of ownership, the size of assets under control, etc. On the country level, expropriation seems to be strongly influenced by the institutional and economic environment. For example, it has been argued that the incentives to expropriate tend to rise in bad states of nature when the opportunities of raising additional funds in the market are limited (Shleifer and Vishny, 1997). Recent papers that exploit the legal approach to corporate governance show that private benefits of control depend on the legal norms protecting minority shareholders and on the quality of law enforcement in a particular jurisdiction (see, e.g., La Porta *et al.* 1999; Johnson *et al.*, 2000) as well as on a number of extra legal institutions such as competition, internal norms, pressure from labour, media diffusion, and tax enforcement (Dyck and Zingales, 2002).
[7] The traditional measure is the ratio of the volume of transactions (in terms of money) to the average absolute percentage change in price. Instead of the measures based on the volume of trade, liquidity may be proxied by the number of transactions; the spread between the ask and bid prices; the number of days between the end of the month and the day of the previous recorded transaction, etc.
[8] Preferred stock appeared in the RTS only in September 1996. It is possible to use earlier data from over-the-counter market, but only at the cost of loosing liquidity information.
[9] Pooled OLS results stay virtually the same if the estimator is applied to the unbalanced panel rather than the full sample.
[10] ADR dummy, if included, is statistically insignificant and changes the reported results little. This is true of this specification and of all those reported below.
[11] The definition of the liquidity difference variable assumes that liquidity of common stock affects the premium with the same magnitude as liquidity of preferred stock, only the sign is the opposite. If separate measures of liquidity of the two classes of stock are used instead of the composite variable, the coefficients on both variables have opposite signs (negative for common shares and positive for preferred shares) and are usually statistically significant. However, as the F-test does not reject the hull H_0: $liq_c=-liq_p$, the composite variable for liquidity differences is justified and given the small number of observations should be preferred as resulting in a more parsimonious model.
[12] Note that in the FE model, the coefficient on the variable for no control by the state, *No_stcont*, is estimated on two observations only: two of the sampled firms were privatized in the early 2000s. This illustrates the problem of using the FE estimator when the within variation in data is small.

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Table 1. Common and preferred share prices of Surgutneftegaz, Unified Energy Systems and Rostelecom, USD*

Company		1997	1998	1999	2000	2001	2002	2003	2004	2005
Surgutneftegaz	common	0.58	0.15	0.07	0.29	0.24	0.34	0.32	0.65	0.83
(SNGS)	preferred	0.39	0.09	0.02	0.11	0.11	0.21	0.23	0.45	0.65
	premium, percent	*50*	*74*	*282*	*175*	*113*	*59*	*36*	*44*	*28*
Unified Energy	common	0.14	0.25	0.03	0.14	0.09	0.17	0.12	0.325	0.306
Systems	preferred	0.1	0.17	0.01	0.06	0.04	0.13	0.1	0.3	0.285
(EESR)	*premium, percent*	*34*	*48*	*129*	*155*	*154*	*34*	*20*	*8*	*7*
Rostelecom	common	2.9	2.96	0.75	2.54	1.01	1.03	1.23	2.43	2.13
(RTKM)	preferred	2.24	2.1	0.28	0.8	0.42	0.53	0.83	1.7	1.62
	premium, percent	*30*	*41*	*170*	*219*	*139*	*94*	*49*	*43*	*31*

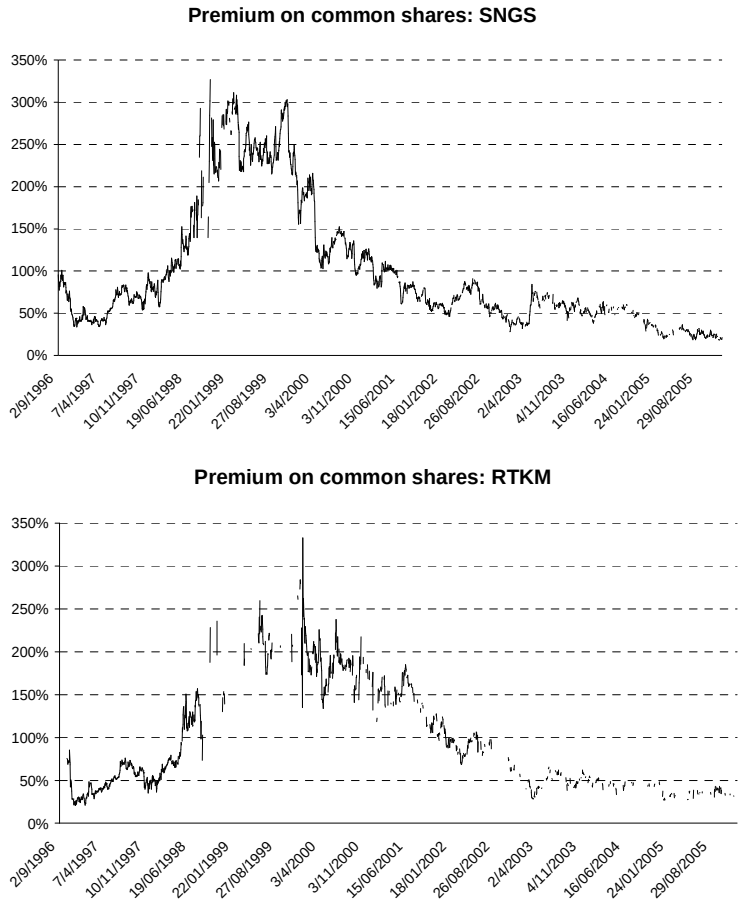
* Weighted-average prices as of January each year, data from the RTS Stock Exchange.

Table 2. Dividends per common and preferred shares of Surgutneftegaz, Unified Energy Systems and Rostelecom, USD*

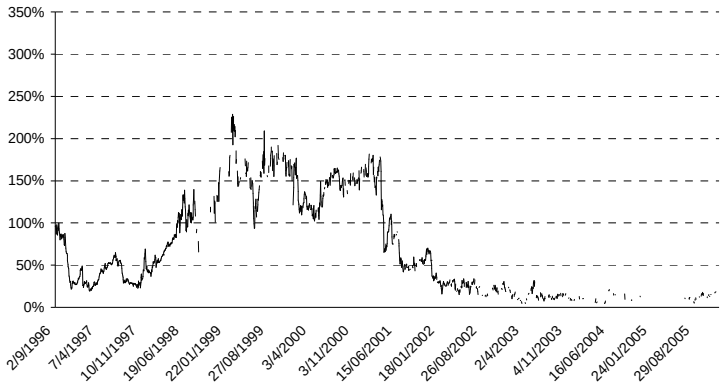
Company		1997	1998	1999	2000	2001	2002	2003	2004	2005
Surgutneftegaz	common	0.0062	0.0012	0.0004	0.0007	0.0014	0.0011	0.001	0.0049	0.0144
(SNGS)	preferred	0.0229	0.0043	0.0004	0.003	0.0063	0.0032	0.003	0.0056	0.0219
	com. to pr., percent	*27*	*27*	*100*	*23*	*23*	*33*	*33*	*88*	*66*
Unified Energy	common	0.0009	0.0008	0.0003	0.0005	0.0007	0.0008	0.0011	0.0016	0.0020
Systems	preferred	0.0009	0.0015	0.0007	0.0013	0.0026	0.0038	0.0092	0.0080	0.0081
(EESR)	*com. to pr., percent*	*100*	*55*	*41*	*36*	*27*	*22*	*12*	*21*	*25*
Rostelecom	common	0	0.0135	0	0.0057	0.0057	0.0069	0.0171	0.0308	0.0527
(RTKM)	preferred	0.0837	0.0945	0	0.0282	0.0148	0.0297	0.0402	0.1141	0.1074
	com. to pr., percent	*0*	*14*	*n/a*	*20*	*39*	*23*	*43*	*27*	*49*

* Dividends from the last financial year to be paid in the current year, Rouble values adjusted using USD/RUR exchange rates as of March 1.

Figure 1. Dynamics of the premium for Surgutneftegaz, Rostelecom and Unified Energy Systems and the RTS Stock Exchange index



Premium on common shares: EESR



RTS index

Table 3. Descriptive statistics: means of variables

year	N obs	VP	π	No_cont	No_stcont	No_prcont	Two	Owner1	Owner2	Owner1-2
1997	37	0.56	0.78	0.11	0.30	0.81	0.11	0.52	0.10	0.43
1998	52	1.40	0.78	0.13	0.25	0.88	0.10	0.52	0.11	0.40
1999	13	1.78	0.82	0.31	0.54	0.77	0.15	0.46	0.16	0.29
2000	38	2.12	0.79	0.18	0.29	0.89	0.13	0.49	0.13	0.36
2001	38	1.37	0.79	0.18	0.29	0.89	0.11	0.52	0.14	0.38
2002	47	0.80	0.78	0.09	0.19	0.89	0.06	0.55	0.14	0.41
2003	37	0.75	0.80	0.11	0.30	0.81	0.08	0.58	0.13	0.45
2004	47	0.50	0.81	0.04	0.26	0.79	0.04	0.61	0.15	0.47
2005	32	0.45	0.81	0.06	0.31	0.75	0.06	0.61	0.14	0.47
Total	341	1.03	0.79	0.12	0.28	0.84	0.09	0.55	0.13	0.42

year	N obs	Liq_c	Liq_p	ΔLiq	ADR	Ddiff	Div10	Veto	Vote	Conv
1997	37	0.14	0.18	-0.03	0.08	0.05	1.00	0.35	0.03	0.03
1998	52	0.18	0.28	-0.1	0.19	0.08	0.96	0.35	0.06	0.04
1999	13	0.29	0.42	-0.14	0.46	0.05	0.85	0.31	0.00	0.08
2000	38	0.19	0.33	-0.14	0.47	0.07	0.95	0.29	0.16	0.03
2001	38	0.23	0.27	-0.04	0.42	0.12	0.92	0.39	0.11	0.05
2002	47	0.15	0.17	-0.02	0.38	0.03	0.96	1.00	0.06	0.02
2003	37	0.12	0.14	-0.02	0.46	0.02	0.89	1.00	0.19	0.00
2004	47	0.12	0.14	-0.02	0.38	0.01	0.87	1.00	0.15	0.00
2005	32	0.09	0.12	-0.02	0.50	0.01	0.84	1.00	0.03	0.00
Total	341	0.16	0.21	-0.05	0.36	0.05	0.92	0.66	0.09	0.02

Table 4. Descriptive statistics of variables: overall, between and within variation

Variable		Mean	Std. Dev.	Min	Max
VP	overall	1.03	0.85	-0.14	4.77
	between		0.72	0.05	4.77
	within		0.66	-0.98	3.43
π	overall	0.79	0.06	0.75	0.96
	between		0.06	0.75	0.96
	within		0.01	0.71	0.90
No_cont	overall	0.12	0.33	0.00	1.00
	between		0.31	0.00	1.00
	within		0.12	-0.75	0.92
No_stcont	overall	0.28	0.45	0.00	1.00
	between		0.46	0.00	1.00
	within		0.10	-0.29	0.90
No_prcont	overall	0.84	0.37	0.00	1.00
	between		0.36	0.00	1.00
	within		0.16	-0.03	1.64
Two	overall	0.09	0.28	0	1
	between		0.27	0	1
	within		0.14	-0.71	0.87
Owner1	overall	0.55	0.12	0.13	0.91
	between		0.13	0.14	0.90
	within		0.05	0.28	0.83
Owner2	overall	0.13	0.07	0.04	0.35
	between		0.06	0.04	0.33
	within		0.04	-0.01	0.29
Owner1-2	overall	0.42	0.16	0.01	0.87
	between		0.16	0.01	0.85
	within		0.07	0.11	0.72
ΔLiq	overall	-0.05	0.16	-0.81	0.38
	between		0.16	-0.64	0.32
	within		0.11	-0.73	0.33
ADR	overall	0.36	0.48	0	1
	between		0.35	0	1
	within		0.25	-0.53	0.91
Ddiff	overall	0.05	0.08	0	0.58
	between		0.05	0	0.23
	within		0.07	-0.18	0.41
Div10	overall	0.92	0.27	0	1
	between		0.28	0	1
	within		0.07	0.67	1.67
Veto	overall	0.66	0.48	0	1
	between		0.42	0	1
	within		0.30	-0.14	1.46
Vote	overall	0.09	0.29	0	1
	between		0.22	0	1
	within		0.23	-0.41	0.98
Conv	overall	0.02	0.15	0	1
	between		0.13	0	1
	within		0.07	-0.78	0.82

Number of observations is 341, number of groups is 99.

Table 5. Regression results

Model	1			2		
VP	OLS	RE	FE	OLS	RE	FE
No_cont	0.358	0.271	0.199			
	(0.203)	(0.191)	(0.148)			
No_stcont				0.367	0.303	0.554*
				(0.206)	(0.202)	(0.246)
No_prcont				0.326	0.210	0.194
				(0.207)	(0.182)	(0.144)
ADR*No_cont	-0.499*	-0.394*	-0.201	-0.494*	-0.391*	-0.211
	(0.209)	(0.198)	(0.257)	(0.208)	(0.195)	(0.254)
ΔLiq	-1.331**	-1.353**	-1.186**	-1.336**	-1.363**	-1.213**
	(0.298)	(0.338)	(0.432)	(0.301)	(0.341)	(0.430)
Veto	-0.096	-0.066	-0.155	-0.096	-0.069	-0.194
	(0.133)	(0.133)	(0.155)	(0.132)	(0.132)	(0.154)
Conv	-1.608**	-1.510**	-1.175**	-1.624**	-1.540**	-1.179**
	(0.171)	(0.189)	(0.317)	(0.182)	(0.206)	(0.307)
Vote	0.136	0.123	0.049	0.134	0.119	0.019
	(0.143)	(0.143)	(0.157)	(0.144)	(0.143)	(0.152)
Ddiff	-1.120	-0.962	-0.616	-1.101	-0.922	-0.522
	(0.657)	(0.698)	(0.835)	(0.662)	(0.702)	(0.820)
Div10	-0.270**	-0.273**	-0.687**	-0.254**	-0.234*	-0.524**
	(0.085)	(0.091)	(0.121)	(0.094)	(0.102)	(0.153)
Y1997	-0.888**	-0.882**	-0.825**	-0.891**	-0.884**	-0.826**
	(0.166)	(0.184)	(0.224)	(0.166)	(0.184)	(0.224)
Y1998	-0.109	-0.167	-0.137	-0.109	-0.170	-0.142
	(0.177)	(0.182)	(0.206)	(0.177)	(0.182)	(0.205)
Y1999	0.221	0.290	0.486	0.217	0.286	0.472
	(0.265)	(0.279)	(0.346)	(0.268)	(0.282)	(0.346)
Y2000	0.518**	0.481**	0.570**	0.518**	0.479**	0.570**
	(0.172)	(0.165)	(0.186)	(0.172)	(0.165)	(0.185)
Y2002	-0.597**	-0.661**	-0.581**	-0.596**	-0.660**	-0.562**
	(0.201)	(0.196)	(0.199)	(0.20)	(0.195)	(0.199)
Y2003	-0.735**	-0.756**	-0.655**	-0.736**	-0.758**	-0.650**
	(0.220)	(0.218)	(0.230)	(0.219)	(0.218)	(0.228)
Y2004	-0.961**	-0.988**	-0.893**	-0.962**	-0.989**	-0.888**
	(0.225)	(0.222)	(0.232)	(0.225)	(0.221)	(0.231)
Y2005	-1.022**	-1.082**	-1.008**	-1.024**	-1.085**	-1.007**
	(0.230)	(0.228)	(0.240)	(0.229)	(0.228)	(0.239)
intcpt	1.776**	1.795**	2.135**	1.427**	1.533**	1.712**
	(0.170)	(0.179)	(0.210)	(0.254)	(0.252)	(0.285)
R-sq	0.565	0.572	0.539	0.566	0.573	0.519
No. obs.	341	313	313	341	313	313
Diagnostics						
F test for FE			1.87 (0.0003)			1.87 (0.0003)
Hausman test			22.61 (0.1244)			6.97 (0.9840)
LM test for RE		2.01 (0.1565)			1.74 (0.1866)	

Table 6. Regression results

Model	3			4		
VP	OLS	RE	FE	OLS	RE	FE
Two	0.342	0.259	0.083			
	(0.179)	(0.167)	(0.195)			
Owner1				-0.904*	-0.926*	-1.090
				(0.404)	(0.383)	(0.604)
ADR*No_cont	-0.372*	-0.291*	-0.020	-0.373*	-0.346*	-0.202
	(0.145)	(0.135)	(0.204)	(0.146)	(0.139)	(0.199)
ΔLiq	-1.327**	-1.360**	-1.184**	-1.327**	-1.326**	-1.129*
	(0.295)	(0.335)	(0.439)	(0.292)	(0.338)	(0.441)
Veto	-0.095	-0.072	-0.149	-0.045	-0.019	-0.116
	(0.133)	(0.135)	(0.155)	(0.133)	(0.132)	(0.153)
Conv	-1.535**	-1.452**	-1.121**	-1.525**	-1.477**	-1.090**
	(0.157)	(0.183)	(0.342)	(0.170)	(0.177)	(0.353)
Vote	0.123	0.113	0.046	0.162	0.139	0.048
	(0.142)	(0.143)	(0.158)	(0.142)	(0.141)	(0.156)
Ddiff	-1.036	-0.895	-0.595	-1.062	-0.937	-0.603
	(0.667)	(0.710)	(0.847)	(0.653)	(0.692)	(0.839)
Div10	-0.308**	-0.293**	-0.690**	-0.268**	-0.263**	-0.658**
	(0.084)	(0.085)	(0.123)	(0.090)	(0.10)	(0.112)
Y1997	-0.90**	-0.894**	-0.826**	-0.894**	-0.888**	-0.829**
	(0.167)	(0.185)	(0.223)	(0.163)	(0.181)	(0.223)
Y1998	-0.111	-0.172	-0.138	-0.116	-0.173	-0.146
	(0.177)	(0.183)	(0.205)	(0.173)	(0.179)	(0.202)
Y1999	0.240	0.292	0.484	0.209	0.268	0.488
	(0.264)	(0.279)	(0.349)	(0.269)	(0.282)	(0.347)
Y2000	0.517**	0.475**	0.562**	0.503**	0.463**	0.561**
	(0.170)	(0.165)	(0.184)	(0.170)	(0.165)	(0.183)
Y2002	-0.604**	-0.663**	-0.588**	-0.620**	-0.673**	-0.599**
	(0.201)	(0.197)	(0.199)	(0.198)	(0.195)	(0.196)
Y2003	-0.739**	-0.757**	-0.662**	-0.727**	-0.752**	-0.651**
	(0.220)	(0.219)	(0.229)	(0.217)	(0.218)	(0.229)
Y2004	-0.975**	-0.997**	-0.906**	-0.946**	-0.978**	-0.888**
	(0.224)	(0.221)	(0.229)	(0.219)	(0.219)	(0.228)
Y2005	-1.040**	-1.092**	-1.020**	-0.999**	-1.059**	-1.001**
	(0.228)	(0.227)	(0.238)	(0.224)	(0.226)	(0.238)
intcpt	1.818**	1.823**	2.145**	2.267**	2.294**	2.708**
	(0.174)	(0.180)	(0.214)	(0.296)	(0.30)	(0.415)
R-sq	0.565	0.572	0.534	0.567	0.575	0.540
No. obs.	341	313	313	341	313	313
Diagnostics						
F test for FE			1.85 (0.0004)			1.91 (0.0002)
Hausman test			25.79 (0.0571)			13.97 (0.6007)
LM test for RE		1.93 (0.1648)			4.38 (0.0363)	

Table 7. Regression results

Model	5			6		
VP	OLS	RE	FE	OLS	RE	FE
Owner1	-0.870*	-0.862*	-1.056			
	(0.423)	(0.408)	(0.620)			
Owner2	0.151	0.306	0.379			
	(0.475)	(0.519)	(0.804)			
Owner1-2				-0.607*	-0.659*	-0.750
				(0.276)	(0.261)	(0.440)
ADR*No_cont	-0.371*	-0.344*	-0.169	-0.330*	-0.314*	-0.084
	(0.147)	(0.138)	(0.196)	(0.129)	(0.123)	(0.185)
ΔLiq	-1.331**	-1.339**	-1.144*	-1.359**	-1.366**	-1.170**
	(0.293)	(0.341)	(0.446)	(0.293)	(0.335)	(0.442)
Veto	-0.050	-0.026	-0.116	-0.073	-0.041	-0.123
	(0.137)	(0.137)	(0.151)	(0.130)	(0.129)	(0.146)
Conv	-1.519**	-1.465**	-1.060**	-1.491**	-1.444**	-1.045**
	(0.168)	(0.176)	(0.381)	(0.154)	(0.167)	(0.373)
Vote	0.158	0.133	0.043	0.146	0.126	0.040
	(0.144)	(0.143)	(0.159)	(0.140)	(0.139)	(0.155)
Ddiff	-1.059	-0.918	-0.571	-1.060	-0.903	-0.542
	(0.656)	(0.699)	(0.852)	(0.662)	(0.705)	(0.852)
Div10	-0.274**	-0.280*	-0.680**	-0.290**	-0.30**	-0.710**
	(0.095)	(0.109)	(0.126)	(0.089)	(0.101)	(0.121)
Y1997	-0.888**	-0.875**	-0.811**	-0.870**	-0.859**	-0.792**
	(0.166)	(0.185)	(0.237)	(0.162)	(0.179)	(0.229)
Y1998	-0.112	-0.166	-0.135	-0.101	-0.157	-0.123
	(0.172)	(0.179)	(0.205)	(0.171)	(0.178)	(0.204)
Y1999	0.206	0.264	0.481	0.20	0.260	0.474
	(0.270)	(0.282)	(0.347)	(0.270)	(0.282)	(0.348)
Y2000	0.504**	0.465**	0.561**	0.510**	0.468**	0.560**
	(0.170)	(0.165)	(0.184)	(0.171)	(0.164)	(0.184)
Y2002	-0.618**	-0.671**	-0.598**	-0.611**	-0.666**	-0.596**
	(0.198)	(0.195)	(0.195)	(0.197)	(0.193)	(0.192)
Y2003	-0.725**	-0.748**	-0.648**	-0.722**	-0.745**	-0.649**
	(0.217)	(0.218)	(0.228)	(0.215)	(0.215)	(0.225)
Y2004	-0.947**	-0.982**	-0.895**	-0.958**	-0.990**	-0.907**
	(0.219)	(0.216)	(0.220)	(0.219)	(0.217)	(0.221)
Y2005	-1.000**	-1.061**	-1.006**	-1.010**	-1.067**	-1.015**
	(0.223)	(0.223)	(0.229)	(0.223)	(0.223)	(0.230)
intcpt	2.234**	2.235**	2.653**	2.055**	2.101**	2.461**
	(0.309)	(0.320)	(0.440)	(0.229)	(0.239)	(0.302)
R-sq	0.567	0.575	0.539	0.565	0.574	0.536
No. obs.	341	313	313	341	313	313
Diagnostics						
F test for FE			1.90 (0.0002)			1.91 (0.0002)
Hausman test			12.57 (0.7645)			6.39 (0.9834)
LM test for RE		4.12 (0.0425)			3.99 (0.0457)	

Table 8. OLS regressions results for the 1997-2001 and 2002-2005 sub-samples

Model	1997-2001			2002-2005		
VP	1	2	3	4	5	6
No_cont	0.251			0.608*		
	(0.189)			(0.275)		
Two		0.219			0.555**	
		(0.199)			(0.176)	
Owner1-2			-0.874*			-0.259
			(0.385)			(0.216)
ADR*No_cont	-0.358	-0.240	-0.325	-0.798**	-0.631**	-0.294**
	(0.257)	(0.224)	(0.235)	(0.277)	(0.169)	(0.104)
ΔLiq	-1.888**	-1.891**	-1.876**	-0.048	-0.033	-0.023
	(0.377)	(0.372)	(0.378)	(0.265)	(0.266)	(0.261)
Veto	-0.106	-0.109	-0.074			
	(0.144)	(0.145)	(0.137)			
Conv	-1.699**	-1.638**	-1.623**			
	(0.165)	(0.162)	(0.161)			
Vote	0.246	0.226	0.233	0.048	0.048	0.111
	(0.282)	(0.280)	(0.277)	(0.081)	(0.083)	(0.097)
Ddiff	-1.213	-1.146	-1.129	-2.150	-1.992	-1.926
	(0.686)	(0.699)	(0.697)	(1.111)	(1.111)	(1.113)
Div10	-0.181	-0.223	-0.207	-0.358**	-0.404**	-0.369**
	(0.194)	(0.193)	(0.186)	(0.063)	(0.071)	(0.069)
Y1997	-0.892**	-0.898**	-0.862**			
	(0.174)	(0.175)	(0.171)			
Y1998	-0.142	-0.141	-0.129			
	(0.178)	(0.178)	(0.172)			
Y1999	0.185	0.194	0.142			
	(0.258)	(0.257)	(0.267)			
Y2000	0.448*	0.449*	0.441*			
	(0.178)	(0.176)	(0.177)			
Y2003				-0.139	-0.136	-0.117
				(0.072)	(0.072)	(0.077)
Y2004				-0.370**	-0.384**	-0.374**
				(0.071)	(0.069)	(0.070)
Y2005				-0.434**	-0.451**	-0.427**
				(0.078)	(0.075)	(0.081)
intcpt	1.688**	1.732**	2.064**	1.216**	1.264**	1.343**
	(0.224)	(0.228)	(0.289)	(0.078)	(0.080)	(0.126)
R-sq	0.505	0.504	0.513	0.336	0.348	0.302
No. obs.	178	178	178	162	162	162